MEDICAL RESPONSE TO HAZARDOUS MATERIALS INCIDENT

PURPOSE

To supplement the Operational Area Plan Hazardous Material Response Policy. To provide a more detailed medical perspective and serve as a guide to dispatch centers, EMS response agencies, (both public and private) and acute care hospitals and to outline a plan of coordinated medical response to victims of hazardous materials incidents for decontamination, protective measures, and treatment.

DEFINITIONS

"Exclusion Zone" or "Hot Zone" is that area immediately around the spill where contamination does or could occur. It is the innermost of the three zones of a hazardous materials site. It is the zone where mitigation measures take place. Special protection is required for all personnel operating in this zone. All personnel exiting this zone will require decontamination.

"Contamination Reduction Zone" or "Warm Zone" is that area between the Exclusion Zone and the Support Zone. This zone contains the Contamination Reduction Corridor where the decontamination team decontaminates the personnel leaving the Exclusion Zone. This zone may require a lesser degree of protective equipment than the Exclusion Zone. This area separates the contaminated area from the clean area and acts as a buffer to reduce contamination of the clean area. No contamination should pass through to the clean area.

"Support Zone" or "Cold Zone" is the clean area outside of the Contamination Control Line. Personnel and equipment are not expected to become contaminated in the area. Special protective clothing is not required. This is the area where resources are assembled to support the hazardous materials operation.

PROCEDURE

Operational Principles for Respoinders

1. There is a direct relationship between the type and amount of material and the resultant illness. Exposure may lead to injury and death. Risk to personnel is directly related to the type of contaminant and length of exposure.
2. A single small release, with any degree of personal carelessness, could disable an entire emergency medical system.
3. On-scene personnel safety takes priority over any immediate rescue/ resuscitation concerns.
4. Pre-hospital health care providers will be unable to respond to other emergencies until decontamination of involved equipment and personnel is accomplished.

Response and Activation

1. Immediate notification to the County Interagency Hazardous Materials Emergency Response Team through appropriate dispatch center.
2. Information (if known) to be provided to responding agencies:
   a. Name of substance (this could include basic information such as container information, placards, color/size/odor descriptions, and should be obtained from a safe distance); do not make an effort to smell any chemical as this could result in an adverse exposure to response personnel.
   b. Physical state of material (liquid, gas, powder, etc.).
   c. Extent of contamination.
   d. Lay of the land.

e. Wind direction, other weather conditions.
f. Staging area, sic. upwind, upstream, uphill.
g. Alternate travel route.
h. Consider activation of MCI if appropriate.

Hospital Notification

In all cases, hospitals should immediately be made aware of any hazardous materials involved through the ReddiNet system or by phone. This early alert will allow the hospital(s) to prepare for the eventuality of receiving patients from the incident. This notification should be made even if it appears no victims have received exposure or contamination. This pre-notification also allows lead-time to establish a screening program thereby minimizing the potential for contamination of the facilities by arriving victims who have not otherwise been screened at the incident site by responders.

First Responding Ambulance

1. If an ambulance is the first responder, upon suspicion of a hazardous material release, the crew should:
   a. Advise the appropriate dispatch center of the situation. This information will minimize unnecessary and inadvertent exposure to other public safety personnel and equipment.
   b. The ambulance crew shall await arrival of appropriate resources prior to rendering any treatment.
2. Medical responders will always work in the Support Zone. They should never enter the Exclusion or Contamination Reduction Zones.
3. The IC will determine the level of personal protective equipment (PPE) needed in all of the zones.
4. Only personnel who are wearing proper personal protective equipment (PPE) shall make contact with victims in the Exclusion or Contamination Reduction Zones
5. The Incident Commander or designee will make all decisions regarding the mode of transportation for injured persons.

On Site Treatment

1. Within the Exclusion and Contamination Reduction Zones
   Self-contamination potential and restrictions caused by PPE make definitive treatment within these zones difficult. Those trained in providing medical care in a hazardous environment, and limited to basic life support procedures should provide medical treatment within these zones. This treatment should be followed by rapid transportation to the Containment Reduction Zone/ Decon. Any ambulatory victims need to be directed to an Ambulatory Decon Area/Line for decontamination. It is possible some of these people can decontaminate themselves.
2. The Safe Zone
   Paramedic medical interventions should begin only after the decontamination process. Treatment should be in accordance with prevailing medical standards of care and by consultation with the base hospital, if indicated. One hospital should act as the coordinating hospital using resources such as Regional Poison Control Center and/or Toxic Information Center.
3. In some cases, individuals may arrive at local hospitals without going through decontamination. Hospitals should be prepared for this possibility. Hospital security or other staff persons should be notified and located by the hospital main and emergency entrance doors. Personnel should question every entrant as to their reasons for coming to the hospital. Preliminary screening should ensure that persons who are contaminated at the incident and who have not been through field decontamination are isolated and restricted from entering the hospital. These victims have the potential for exposure risk and contamination of personnel and facilities. Contamination could result in the lengthy shutdown of a facility while specialized decontamination teams render the facility safe.

Medical Transportation

1. Ground Ambulance Preparation
   a. If a victim is contaminated, there will be no transport until gross decontamination is performed. A contaminated patient should not be transported to a hospital via ambulance. If it is necessary then:
      i. A plastic sheet should be placed on the ambulance floor prior to transport.
      ii. Adequate ventilation should be provided to avoid accumulation of toxic chemical levels in the ambulance.
2. Helicopter Consideration
   a. A decision to utilize helicopter services should be decided by the collaboration of the Incident Commander, or designee and the flight crew.
   b. Guidelines outlined in the previous section (ground transportation) should be applied to preparing a helicopter prior to transporting patients.

Determination of Destination Hospital and Related Preparation

1. Destination Hospital
   The destination hospital should be determined by the standard of the closest, and most appropriate. When information indicates the hazardous material possesses a significant threat to hospital personnel, consideration should be given in consultation with the Base Hospital Physician to triage the patients to a single hospital. This decision should be made based on the potential danger to attending staff, threatened facility closure and the ability of the hospital to handle such cases.
2. Preparation by Receiving Hospital(s)
   a. Internal preparation according to hospital policies and procedures.
   b. Anticipate walk-in contaminated patients.
   c. Anticipate the need for fine detail decontamination (e.g. fingernail beds and ear canals of persons who were field decontaminated). Check for contact lenses.
   d. In the event contaminated victims arrive at the hospital by private means (i.e. not decontaminated in the field), the hospital should be prepared to decontaminate victims outside the Emergency Department. This should be a pre-designated area dedicated for this purpose. Some accessories may include:
      i. Temperature controlled water hose (low pressure).
      ii. Kiddie pool or other acceptable catch basin.
      iii. Expendable or easily decontaminated gurney.
      iv. Towels and sheets for patient.
      v. Movable screens for privacy.
      vi. Plastic lined garbage receptacles for contaminated clothes and equipment.
      vii. A current contract with a State licensed hazardous materials contractor to dispose of contaminated materials and properly perform area decontamination should already be in place.

Base Hospital Medical Control Roles and Responsibilities

1. Assignment of a Mobile Intensive Care Nurse/Emergency Department Physician or designee to ReddiNet, if available, throughout the duration of the incident.
2. Collaboration of Base Hospital Physician and the Incident Commander/Technical Reference Team Leader as to the best method of decontamination.
3. Provide to paramedics, on-line information regarding prodromal symptoms that may be expected as a result of exposure to hazardous materials.
4. Anticipate walk-in contaminated patients and initiate appropriate action.
5. Assist in consultation and determination of destination

Decontamination of Prehospital Equipment and Personnel

Proper protection of equipment and supplies should minimize equipment and personnel out of service due to any contamination that may occur during transport. If the vehicle and equipment are contaminated during transport, they should not return to service until adequately decontaminated by qualified personnel. In addition, the following procedure should be followed:

1. Personal protective garments should be discarded in designated receptacles at hospital facilities as soon as practical.
2. Decontamination should take place under the direction of designated hazardous materials personnel.
3. Decontamination should take place in an area where wastewater can be contained.
4. No medical vehicle, associated hardware, or supplies shall be released for service until clearance is received from designated hazardous materials personnel.